

A NEW FAMILY OF CENTIPEDES FROM BAJA CALIFORNIA WITH
INTRODUCTORY THOUGHTS ON ORDINAL REVISION
(CHILOPODA: GEOPHILOMORPHA: ERIPHANTIDAE)

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ABSTRACT—A new centipede family, **Eriphantidae**, is erected for **Eriphantes telluris**, n. gen. and n. sp. and comments are presented on some suprageneric categories included in the order Geophilomorpha.

That the new entity described here represents a new genus and species is certain, for among all Geophilomorpha, indeed among all known centipedes, it is unique in possessing a prehensor consisting of just two separate, movable parts, a distal tarsungula movably hinged to a single proximal complex comprised of the fused trochanter, prefemur, femur, and tibia. In all other centipedes except the Aphilodontidae the femoral and tibial components are separate and movable. (In the Aphilodontidae, which are not at all closely related to the present forms, the femur is amalgamated with the proximal complex, leaving the tibial element free, so that the prehensor consists secondarily of three separate parts.)

Especially in the foregoing but also in certain other features *Eriphantes*, new genus, departs sufficiently from all other known taxa such that it should be taken as the basis for a new suprageneric category of family rank within a nascent geophiloid complex of related families.

Involved here is an intentional departure from Attems' familial system of 1929,² which has enjoyed widespread acceptance for the past forty years largely because he had included it in the most comprehensive and above all useful compilation of the order ever written. First and foremost, his system seeks to be useful and practical; that is, he designed it primarily (though not exclusively) to facilitate identification. He did not design it *primarily* to be an analytical instrument for reflecting and illuminating phylogenetic relationships. But even as a practical device for identification inevitably it has lost some utility over the past forty years, first, obviously because of the accumulation of new taxa that it does not include, but also because of the subsequent proposal of new or conflicting concepts of classification.

Attems' arrangement, which included no superfamilies and correctly ignored Verhoeff's suborders, envisioned a division of the Geophilidae

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² Das Tierreich, Lief. 52, pp. 1-388, 1929.

into five subfamilies, viz. Geophilinae, Pachymerinae, Chilenophilinae, Dignathodontinae, and Aphilodontinae, all of which R. V. Chamberlin regarded as sovereign families; nor was he alone in this belief. K. W. Verhoeff assigned to the dignathodontids (stubbornly calling them Scolio-planidae) family rank, and it is a striking commentary upon his sporadic flashes of often brilliant insight that in later writings he mentioned (in passing without developing the concept) that the "Scolio-planidae" (= Dignathodontidae) were very closely related to the Aphilodontidae, and, inferentially, that they were more closely related to each other than either was to the Geophilidae. Without having published it, I had independently come to the same conclusion and remain convinced of it.

The foregoing and ensuing discussions are intentionally preliminary and incomplete. They are provided here to help explain the positional assignment of the new family being introduced. More than that is beyond the scope of this paper. I have, however, now in completed form a full revisionary treatment of the higher categories (families et supra) of the Geophilomorpha; this will be published elsewhere in the near future.

The underlying scheme will help clarify the following discussion.

Superfamily Geophiloidea

Geophilidae

Chilenophilidae

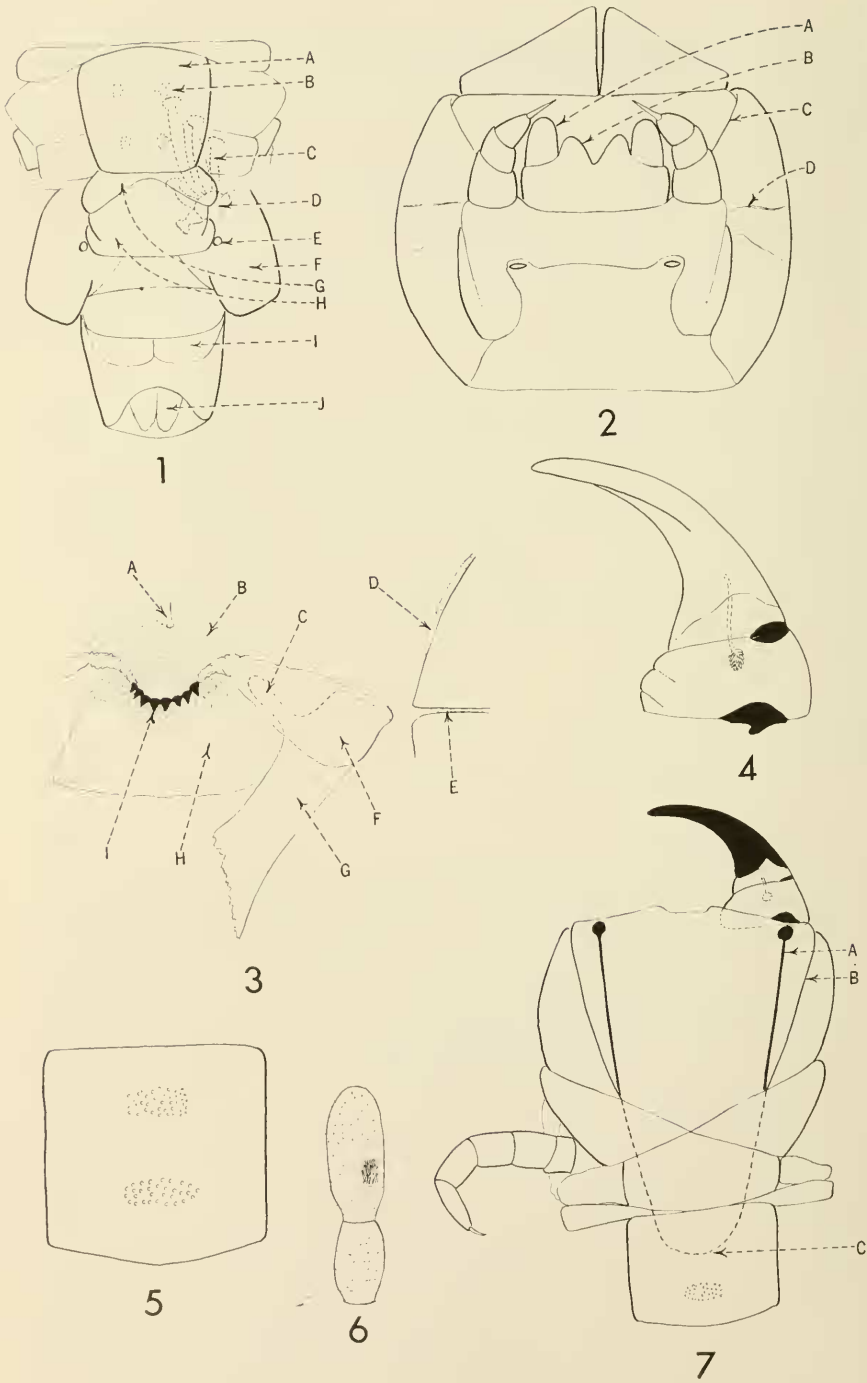
Eriphantidae, new family

Superfamily Dignathodontoidea, new superfamily

Dignathodontidae

Aphilodontidae

Geophilidae above is approximately equivalent to Attems' Geophilinae of 1929. Chilenophilidae is equal to Attems' Chilenophilinae and Pachymerinae taken together. Chamberlin and Attems regarded these two taxa as separate entities: for Chamberlin they were distinct families; for Attems they were two subfamilies, and the signal criterion of difference between the two taxa was the presence or absence of a second maxillary statumen (sclerotic ridge). My reasons for uniting the two in a single family (Chilenophilidae is the older name) are somewhat lengthy as well as unforeseen, and are best explained in my forthcoming higher categorical revision of the order. On the basis of considerable experience working with those genera that Chamberlin took to comprise his family Sogonidae, I have been unable to find convincing evidence that they constitute a family or possibly any natural suprageneric assemblage. If there is any cohesion associating them, it may only be geographical. In the scheme above, Sogonidae falls as a junior synonym of Geophilidae (**new synonymy**). Chamberlin's illusory Soniphilidae, which in my view has even less reason-for-



being than Sogonidae, is also regarded here as a junior synonym of Geophilidae (**new synonymy**).

Dignathodontidae is equal to Attems' subfamily of the same name. Affiliating the dignathodontids with the aphilodontids within a new superfamily, Dignathodontoidea, implies a deviant and substantial reassessment of their relationship with each other and with the other geophilomorph families. While this particular arrangement reflects my own present thinking on their rank and relationships, credit for the initiating insight is reserved for Verhoeff.

ERIPHANTIDAE, n. fam.

Type-genus: *Eriphantes*, n. gen. By original designation and monobasic.

Of all families the Eriphantidae seem most closely to resemble the Geophilidae (*sensu stricto*) but differ most notably from them in at least the following major diagnostic features. Eriphantidae: (1) Prehensor consisting of only two separate, movable parts, i.e. distally a normal tarsungula, proximally a single complex consisting of the totally fused tibia, femur, and trochanteroprefemur. (2) Antennal article 14 with a pair of sunken, widely subterminal setosensoria situated approximately at mid-article level (as in all Himantariidae and many Schendylidae). (3) Labrum unipartite. Geophilidae: (1) Prehensor consisting of four separate and movable parts, i.e. tarsungula, tibia, femur, and trochanteroprefemur. (2) Antennal article 14 without a pair of sunken, widely subterminal setosensoria; at most terminally with a small amorphous group of modified setae. (3) Labrum tripartite.

Additional important family criteria are the following in combination. Body extremely long and flat, himantariiform, notably polypodal. Antennae attenuate, flat, short. Head subquadrate. Clypeus very wide, without a pair of prelabral setae, without a fenestra or plagulae. Labrum unipartite, sinuous, pendent, medially finely dentate. Mandible: shaft very short and bent; dental margin very short; armed with a single row of simple, hyaline teeth. First maxillae: coxosternum deep, sides straight, medially neither diastemate nor suture; without lappets. Second maxillae: isthmus areolate, neither diastemate nor suture; postmaxillary sclerites absent; telopodite claw simple. Prehensor robust and short, without

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Figs. 1-7, *Eriphantes telluris*, n. gen., n. sp.: 1, posterior end of body, ventral aspect (A = penult pedal sternite; B = anterior porefield; C = gland canal; D & E = gland openings; F = coxopleuron; G = ultimate presternite; H = ultimate pedal sternite; I = female gonopod; J = adanal lamina); 2, clypeus, buccae & maxillae, ventral aspect (A = first maxillary telopodite; B = first maxillary medial lobe; C = paraclypeal suture; D = buccal suture); 3, labrum & environs, ventral aspect (A = prelabral seta; B = clypeus; C = transverse arm of fultura; D = paraclypeal suture; E = buccal suture; F = coclypeus; G = posterior arm of fultura; H = epiphrynx; I = labral teeth); 4, left prehensor, ventral aspect, shown unpigmented; 5, fourth pedal sternite; 6, antennal articles 13 & 14 showing setosensorium; 7, anterior end of body, ventral aspect (A = pleurogram; B = pleuroprosternal suture; C = rear terminus of prosternal coxal plates).

denticles. Prosternum: very deeply ingressing into trunk; pleuroprosternal sutures oblique, complete; pleurograms strong, complete. Paratergites absent. Legs: pretarsal anterior parungues greatly elongate. Sternites: wider than long; porefields on most sternites appearing as anterior and posterior bands. Each coxopleuron only very slightly inflated, each with two cryptic gland complexes, one homogeneous, one heterogeneous. Ultimate leg with two tarsalia, the pretarsus unguiform. Female gonopods flat, each uniarticular, fused. Anal pores absent.

Eriphantes, n. gen.

Type-species: *Eriphantes telluris*, n. sp., by original designation and monotypy. A single species is referred to the genus.

Extremely elongate, flat, polypodal. Antennae flat, attenuate, short; ultimate article with two himantariiform setosensoria. Cephalic plate as long as wide. Clypeus very wide; prelabral setae absent; paraelypeal sutures oblique, complete. Labrum sinous, pendent, medially finely dentate, unipartite. Mandible shaft very short, proximally strongly bent; corpus greatly compressed. First maxillae: coxosternum narrow, deep, sides straight; medially not sutured; lappets absent; telopodites without lappets or hyaline sutures. Second maxillae: isthmus areolate, not sutured, not diastemate; postmaxillary sclerites absent; telopodite not atrophied, articles robust, condyles absent; apical claw long, acicular, unarmed. Prehensor: robust, short; tarsungula dominant, presentation mesal; secondarily biarticular, the basal four articles fused; poison calyx non-linear. Prosternum deeply ingressing into trunk; anterior denticles absent; pleuroprosternal sutures oblique; pleurograms present, strong, complete. Tergites asulcate. Paratergites absent. Anterior parungues notably elongate, hypertrophied. Sternites without special appurtenances; much wider than long; porefields on all but ultimate sternite, peripheral in nature, anteriorly manifest as two bands. Ultimate pretergite laterally not fissate, fused with pleurites. Sternite pentagonal. Coxopleuron only slightly inflated, relatively small; each with two gland complexes, the anterior heterogeneous, the posterior homogeneous. Telopodite with two tarsalia and an unguiform pretarsus. Female gonopods flat, uniarticular, medially fused. Anal pores absent.

Eriphantes telluris, n. sp.

HOLOTYPE: female. Mexico: Baja California Sur, 8 miles south of Loreto at base of La Gigantea Mts.; January 27, 1965; Vincent Roth. Deposited in the collection of The American Museum of Natural History.

GENERAL. Length ca. 60 mm., greatest width only 0.8 mm. Pedal segments 145. Color uniformly yellowish white. Shape: microcephalous; body dorsoventrally strongly flattened; width essentially uniform, grossly himantariiform.

ANTENNAE. Short, only 2.3 times longer than head. Shape: dorsoventrally strongly depressed; distally conspicuously attenuate; each article beyond first longer than wide (first 3 wider than long), ultimate article very long, nearly equaling two preceding together; basal articles mesally nearly contiguous superficially giving head a pointed, rostrate appearance. Typical setae entirely absent, replaced by minute point-like setal derivatives. Setal sensoria of ultimate article on mesal and ectal surfaces at level just proximad of midlength, each himantariiform sensorium comprised of a subrotund, dense cluster of robust, spatulate setal deriva-

tives arising from a subsurface depression. CEPHALIC PLATE. Greatest width far exceeding length = 4:3. Anterior and posterior margins straight, lateral margins strongly excurved; dorsally strongly domed. Setae, frontal suture absent. Prebasal plate concealed. CLYPEUS. Very short and wide. Clypeal areas, plagulae absent. Paraclypeal sutures complete, strong. Transbuccal sutures prominent, laterally nearly complete. Central and anterior setae absent; on each lateral third a group of sparse short, atypical setae. LABRUM. Sinuously curved, medially strongly protracted. Comprised of one piece, not discernibly tripartite, but with a strongly arched medial conspicuously dentate portion as in *Gonibregmatus*, teeth directed ventroposteriorly, not anteriorly; cotypei sizeable. MANDIBLE. Essentially geophilidiform, its distal edge armed with a simple row of short, robust, hyaline filaments. Mandibular shaft very short, strongly curved. FIRST MAXILLAE. Coxosternum transversely comparatively narrow, anteroposteriorly very deep; medially neither diastemate, suturate, nor divided in any way; sides perfectly parallel to long body axis, not oblique; lappets absent. Telopodites: relatively long, sides parallel, not tapering, strictly uniarticular without trace of transverse division, without apical membranous cap; lappets absent. Medial lobes: relatively very short; not membranous apically; medial angles not extending posteriorly. SECOND MAXILLAE. Isthmus areolate, not membranous; without trace of division or diastema. Coxosternite: posteriorly comparatively long, without discrete postmaxillary sclerites; maxillary pore without sclerotized alveolus, open mesally; statumen absent. Telopodite: not atrophied or specially modified, the articles clearly discrete, not amalgamated; basal article without ventral and dorsal condyles, remaining articles without formed interarticular condyles; ultimate article short, its apical claw exceedingly long, aciculate, neither pectinate nor excavate, basal spines absent.

FORCIPULAR SEGMENT. Telopodite short and extremely robust, represented most notably by the massive tarsungula, the proximal articles having amalgamated to form a single atrophied structure; each prehensor is thus secondarily only bipartite. Tarsungula: long, robust, not dorsoventrally depressed, with smooth (not serrate) dorsal and ventral edges. Trochanter, prefemur, femur, and tibia all fused without trace of division. Poison apparatus: calyx of the non-linear, subcordate type, in the fused basal articles; gland arising within basal prehensor and extending into coxosternum but not into trunk. Coxosternum: massive, the broad, fused coxal plates deeply invading body trunk to level of second somite; prosternum with strong pleurograms extending completely to condyles. Pleuroprosternal sutures oblique, complete, ending dorsolaterally. Pleural sclerites exceedingly extensive but not intimately fused with epiprosterium.

TERGITES. Asulcate. Transversely very wide, anteroposteriorly very short; intertergites comparatively long. Typical setae absent. PLEURITES. Paratergites absent. Stigmopleurites discrete; spiracles round. LEGS. Short, robust; first pair not shorter than second. Setae absent. Pretarsi: each very long and narrow, laterally compressed, ventrally very narrowly excavate, strongly curved ventrad; posterior ungues essentially absent, represented by minute points (barely discernible at $860\times$), anterior parungues robust and conspicuously elongate, at least half as long as associated ungues. STERNITES. Except for sensory points devoid of typical setae. Without sulci, sternobothria, fossae, pockets, and *carpophagus*-structures. Pro- and metasternal portions not differentiated. All longer than wide, slightly so on anterior third of body, markedly so on posterior body two-

thirds. Intersternites transversely wide, all medially strongly constricted, laterally alate. Porefields: present on pedal sternites one through penult; on anterior body quarter each sternite with porefields, that of sternite anterior half subcircular, that of sternite posterior half transversely elliptical; on posterior three-quarters of body each porefield divided midlongitudinally in two such that each sternite has four subcircular porefields; all pro- and metasubcoxae with a few scattered pores overlying their glands.

ULTIMATE PEDAL SEGMENT. Pretergite transversely very wide, fused without sutures with its pleurites. Tergite: greatest width far exceeding length; lateral and posterior margins rounded. Presternite: transversely very narrow, in effect wrapped around its sternite, not extending laterally beyond it; medially membranous. Sternite: grossly appearing pentagonal, anterior obtusely pointed, posterior margin straight, laterally slightly infolded; greatest width far exceeding length. Coxopleuron only slightly inflated, comparatively small. Glandular apparatus: each coxopleuron with two glandular complexes, the more posterior homogeneous in composition, comprised of a single large gland with one porous exit opening beneath sternite laterally, the more anterior complex structurally heterogeneous, being comprised of numerous glands and canals exiting via pores within a large cavity situated between ventrolateral surface of coxopleuron and preceding segment's pleuron, the heterogeneous, anterior complex thus situated within both the coxopleuron and the antepenult pedal segment. Telopodite: longer than penult (8:5); articles very slightly inflated, each longer than wide; with two equal tarsalia; with a prominent unguiform pretarsus, this with a long parunguis; setae very short and sparse, sensory points numerous. **POSTPEDAL SEGMENTS.** Female gonopods uniarticular, flat, medially pseudo-suturate, fused. Anal pores absent.

PARATYPES. There are two paratypes, both female; both are deposited in the American Museum of Natural History. They do not differ appreciably from the holotype. Paratype A. Leg pairs, 143. Baja California Norte. 10 miles southwest of Rancho Megquital at 28° N. January 18, 1965. Vincent Roth, leg. Paratype B. Leg pairs, 123. Baja California. Isla San Pedro. April 3, 1953. B. Firstman, leg.